New DIV Application

Inv: Koji MARUYAMA, et al.

Preliminary Amendment

Amendments to the Claims:

Please amend the claims as follows:

Claims 1-2 (Canceled).

Claim 3 (New): An information reproducing method for reproducing a

representative picture recorded on an information disc, said information recording disc

including,

a managing file in which management information is stored, and

an A/V file in which at least one of audio and video information is stored,

at least one object is recorded in said A/V file, said at least one object including object

units, each of said object units including at least one of a video pack in which video data is

recorded and an audio pack in which audio data is recorded,

said management information includes original program chain information including

cell information representing at least one cell, and a video manager information table

including disc representative picture information for a disc representative picture,

said video manager information table is provided in another hierarchically preceding

area relative to said original program chain information and includes a start address of said

original program chain information.

said original program chain information designates respective cell reproduction

orders, said at least one cell refers to at least a part of said at least one object,

said disc representative picture information includes information regarding a program

chain number, a cell number, a picture point as a presentation time of a picture representing

recording contents of the disc, and information regarding a time when the disc representative

picture was made, and

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said disc representative picture is a picture existing in a cell identified by said cell

number,

the information reproducing method comprising:

reading said management information;

referring to said disc representative picture information;

determining a position of said disc representative picture in said video file; and

decoding said disc representative picture.

Claim 4 (New): An information reproducing apparatus reproducing a representative

picture recorded on an information disc, said information recording disc including,

a managing file in which management information is stored, and

an A/V file in which at least one of audio and video information is stored,

at least one object is recorded in said A/V file, said at least one object including object

units, each of said object units including at least one of a video pack in which video data is

recorded and an audio pack in which audio data is recorded,

said management information includes original program chain information including

cell information representing at least one cell, and a video manager information table

including disc representative picture information for a disc representative picture,

said video manager information table is provided in another hierarchically preceding

area relative to said original program chain information and includes a start address of said

original program chain information,

said original program chain information designates respective cell reproduction

orders, said at least one cell refers to at least a part of said at least one object,

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said disc representative picture information includes information regarding a program chain number, a cell number, a picture point as a presentation time of a picture representing recording contents of the disc, and information regarding a time when the disc representative

picture was made, and

said disc representative picture is a picture existing in a cell identified by said cell

number,

the information reproducing apparatus comprising:

reproducer for reproducing said management information, for referring to said disc representative picture information, and for determining a position of said disc representative

picture in said video file; and

a decoder for decoding said disc representative picture.

Claim 5 (New): An information recording method for recording a representative

picture on an information disc, said information recording disc including,

a managing file in which management information is stored, and

an A/V file in which at least one of audio and video information is stored,

at least one object is recorded in said A/V file, said at least one object including object

units, each of said object units including at least one of a video pack in which video data is

recorded and an audio pack in which audio data is recorded,

said management information includes original program chain information including

cell information representing at least one cell, and a video manager information table

including disc representative picture information for a disc representative picture,

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said video manager information table is provided in another hierarchically preceding

area relative to said original program chain information and includes a start address of said

original program chain information,

said original program chain information designates respective cell reproduction

orders, said at least one cell refers to at least a part of said at least one object,

said disc representative picture information includes information regarding a program

chain number, a cell number, a picture point as a presentation time of a picture representing

recording contents of the disc, and information regarding a time when the disc representative

picture was made, and

said disc representative picture is a picture existing in a cell identified by said cell

number,

the information recording method comprising:

determining a position of said disc representative picture in said video file;

generating said disc representative picture information; and

recording said management information including said disc representative picture

information.

Claim 6 (New): An information recording apparatus for recording a representative

picture on an information disc, said information recording disc including,

a managing file in which management information is stored, and

an A/V file in which at least one of audio and video information is stored,

at least one object is recorded in said A/V file, said at least one object including object

units, each of said object units including at least one of a video pack in which video data is

recorded and an audio pack in which audio data is recorded,

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said management information includes original program chain information including

cell information representing at least one cell, and a video manager information table

including disc representative picture information for a disc representative picture,

said video manager information table is provided in another hierarchically preceding

area relative to said original program chain information and includes a start address of said

original program chain information,

said original program chain information designates respective cell reproduction

orders, said at least one cell refers to at least a part of said at least one object,

said disc representative picture information includes information regarding a program

chain number, a cell number, a picture point as a presentation time of a picture representing

recording contents of the disc, and information regarding a time when the disc representative

picture was made, and

said disc representative picture is a picture existing in a cell identified by said cell

number,

the information recording apparatus comprising:

a first processor for determining a position of said disc representative picture in said

video file, and for generating said disc representative picture information; and

a second processor for recording said management information including said disc

representative picture information.

Claim 7 (New): An information recording disc, comprising:

a managing file in which management information is stored, and

an A/V file in which at least one of audio and video information is stored,

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at least one object is recorded in said A/V file, said at least one object including object

units, each of said object units including at least one of a video pack in which video data is

recorded and an audio pack in which audio data is recorded,

said management information includes original program chain information including

cell information representing at least one cell, and a video manager information table

including disc representative picture information for a disc representative picture,

said video manager information table is provided in another hierarchically preceding

area relative to said original program chain information and includes a start address of said

original program chain information,

said original program chain information designates respective cell reproduction

orders, said at least one cell refers to at least a part of said at least one object,

said disc representative picture information includes information regarding a program

chain number, a cell number, a picture point as a presentation time of a picture representing

recording contents of the disc, and information regarding a time when the disc representative

picture was made, and

said disc representative picture is a picture existing in a cell identified by said cell

number.